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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,490	09/29/2005	Karsten Eichhorn	68897-012	4229

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ST. LOUIS, MO 63105-3441

EXAMINER
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LOVELL, LEAH S

ART UNIT	PAPER NUMBER
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2885

MAIL DATE	DELIVERY MODE
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05/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/551,490

Applicant(s)

EICHHORN ET AL.

Examiner

Leah S. Lovell

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2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                            |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>29 September 2005</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 29 September 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the shading device (claim 1), the activated grid segment (claim 1), the unactivated grid segment (claim 1), a light/dark boundary (claim 1), the boundary region (claim 2), the array arranged in a focal plane of the optical element (claim 6), semiconductor light source array (claim 5), and the front side (claim 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. The drawings are objected to because of the following informalities:

- Applicant is asked to redo the drawings for the following reasons:
  - None of the current reference numbers and lead lines correspond to the reference number indicators set forth in the specification.  
For example but not limited to, in the specification reference

number 2 is indicated as the optical element however in all of the figures the lead line leads reference number 2 to the LED.

- The description of figures on page 4 of the specification do not correlate to the figures provided.
  - For example but not limited to, there is no figure 1—there is 1a and 1b, but neither provide “a schematic cross-section through the lighting unit.”
- It is suggested that arrowed lead lines be used to designate the grid, the light source [currently designated as reference numeral 1], and the grid segments.
- The drawings fail to comply with 37 CFR 1.84(u)(2) in that the figure numbers are not easily distinguished since they are the same size as the other reference numerals and, in regard to figure 3, the figure number is very far away from the figure.
- It is suggested that “a lighting unit” be given a reference number and arrowed lead line to indicate the entire lighting unit.
- The drawings fail to comply with 37 CFR 1.84(l) which require all lines to be uniformly thick.
- It is suggested that the Applicant employ the services of a competent draftsman.

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- The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description but not limited to:
  - 15 found in paragraph 20.
  - 16 found in paragraph 21.
  - 9 found in paragraph 22.
  - 10 found in paragraph 22.
  - 11 found in paragraph 22.
  - 18 found in paragraph 24.
  - L found in paragraph 32.
  - G found in paragraph 32.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: LED lighting unit for motor vehicles having grid segments divided by a shading device.

6. The disclosure is objected to because of the following informalities:

- Regarding the brief descriptions of the drawings found on page 4, the figures do not correspond to any of the information in this section. For example but not limited to, there is no figure 1—there is 1a and 1b, but neither provide “a schematic cross-section through the lighting unit.”
- Regarding the reference numerals within the detailed description beginning on page 5:
  - The following reference numerals and their corresponding descriptors do NOT correlate to the information shown in the figures but not limited to: a light source 1 (paragraph 15), an optical element 2 (paragraph 15), semiconductor light sources 3 (paragraph 17), grid 4 (paragraph 17), common carrier substrate 5 (paragraph 17), chip cover 6 (paragraph 19).
  - The following reference numerals are found in the specification but are not found in the figures but not limited to: 15 found in paragraph 20, 16

found in paragraph 21, 9 found in paragraph 22, 10 found in paragraph 22, 11 found in paragraph 22, 18 found in paragraph 24, L found in paragraph 32, and G found in paragraph 32.

- Throughout the specification there are multiple instances of each reference numeral; however, a few of them have different reference numeral indicators. Applicant is asked to please provide one common name for each reference numeral.
  - Reference numeral 6 is described as “transparent chip cover,” “cast body,” and “housing cover.”
  - Reference numeral 3 is described as both “semiconductor light sources,” “the light source” and “chip.”
  - Reference numeral 9 is described as both “a shading device” and “the partition.”
  - Reference numeral 10 is described as both “upper grid segment” and “first grid segment.”
  - Reference numeral 11 is described as both “lower grid segment” and “second grid segment.”
- Applicant is urged to go through the specification and add reference numerals to every instance of the indicator. For example but not limited to, in paragraph 25 reference numeral 4 should be added after “grid” on the second line of the paragraph.

- On line 3 of paragraph 31, “the light source 1, 3” should be changed to either “the light source 1 and the semiconductor light source 3,” “the light source 1,” or “the semiconductor light source 3.” If none of the mentioned options are the intended meaning of “the light source 1, 3,” Applicant is asked to clarify the intentions of the phrase.
- In paragraph 24, starting at the end of line 3 it reads: “no disturbing dark stripe.” It is unclear if “disturbing” is the term desired to complete this sentence. It is suggested that “disturbing” be changed to “distinguishing” or another word having similar meaning.
- The specification is objected to for not disclosing subject matter indicated in claim 5. While it is understood that “semiconductor chips” is a term to encompass a variety of types of LEDs, the specification should reflect all desired types. In this case, “a plurality of chips emitting UV radiation and/or emitting blue light” should be incorporated into the specification.

Appropriate correction is required.

#### ***Claim Objections***

7. Claims 1, 2, 4-7 and 10 are objected to because of the following informalities:
- Regarding claim 1:
    - For consistency, Applicant is asked to provide reference numerals for each instances of claimed subject matter. Examples of subject matter lacking reference numerals are as follows: semiconductor light sources, grid, two grid segments, and optical element.



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- On line 11 of the claim, “and/or” has been removed leaving “a light-scattering light-converting auxiliary material.” It is unclear if this amendment was to indicate that the auxiliary material is both light-scattering AND light-converting (if this is the case, a comma “,” should be inserted between the two adjectives), and, in view of the specification, for the purposes of this office action it is assumed that it was to be an “or” situation and will be examined as “a light-scattering or light-converting auxiliary material.”
- On lines 13 and 14 of the claim, “the activated grid segment and the unactivated grid segment” were not previously indicated, it is suggested that this phrase be changed to “between the two grid segments” or the like.
- Regarding claim 2, it is unclear how this claim further limits claim 1.
- Regarding claim 4, “the partition (9)” (two instances) should be replaced with “the shading device (9)” for consistency.
- Regarding claim 5:
  - “the grid segments (10, 11)” should be replaced with “the two grid segments (10, 11).”
  - The claim contains subject matter not found within the specification; furthermore, “a plurality of chips emitting UV radiation and/or emitting blue light” does not provide enough information to enable the claim. For the purposes of this office action, it is assumed Applicant intends

the LED of this claim to be a white light LED that the white light is formed by a blue chip surrounded by a phosphor material.

- Regarding claim 6, reference numeral 4 has been indicated in the specification to be the grid, not "the semiconductor light source array" as indicated on line 3 of the claim. Either the reference numeral should be changed to a new number to indicate the semiconductor light source array, all instances of "grid" changed to semiconductor light source array, all instances "semiconductor light source array" be changed to "grid."
- Regarding claim 7, "the partition" lacks antecedent basis and "a light/dark boundary" has been previously indicated and should be changed to "the light/dark boundary."
- Regarding claim 10, "the front side" lacks antecedent basis.

8. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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10. Claims 1-4, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Natsume (US 6,619,825).

Regarding claim 1, Natsume discloses a lighting unit for vehicles comprising:

a plurality of semiconductor light sources [29R1, 24R2, 32R, 20A, 20B] distributed in a grid [10; figure 5, wherein a grid indicated a large grouping of the LEDs], the grid of semiconductor light sources [10] being divided into at least two grid segments [12A and 12B], the grid segments being each activatable independently of each other [column 5, lines 62-67];

an optical element [30, 28] in the beam path of a light beam emitted by the semiconductor light sources [figure 2];

the semiconductor light sources [29R1, 24R2, 32R, 20A, 20B] being arranged on a common carrier substrate [26 supports both grids of LEDS by lamp body 14 providing a similar, common substrate] with a chip cover [22] transparent to light in the direction of light propagation [figures 2 and 3];

the chip cover [22] is filled with a light-scattering [36, 34; diffusion board 28 also satisfies the limitation of the chip cover and has light scattering means] or light-converting auxiliary material; and

a shading device [18] is provided in the boundary region between the activated grid segment and the un activated grid segment [figure 2],

such that a steeper transition of light intensity is formed at a light/dark boundary.

In regard to claim 2, Natsume discloses the shading device [18] is arranged in the boundary region between the first grid segment and the second grid segment [figure 2].

Regarding claim 3, Natsume discloses the shading device [18] is designed as a partition which separates the two grid segments from each other [figure 2] and which projects from the carrier substrate in the direction of light propagation [figure 2].

In regard to claim 4, Natsume discloses the partition extends perpendicularly to the carrier substrate [figure 2] and in that the free end of the partition is arranged at a distance from [figure 2] and/or tapering towards a front side of the chip cover.

Regarding claim 7, Natsume discloses the partition [18] having a longitudinal extend [in figure 2, the crossbar which the lead line to reference numeral 18 touches] in the direction of the path of the carrier substrate corresponding to the formation of a light/dark boundary [figure 2].

Regarding claim 9, Natsume discloses the carrier substrate is of flat or curved construction [flat construction shown in figure 2].

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 5, 6, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Natsume (US 6,619,825) in view of Chen et al. (US 6,520,669).

Regarding claims 5, 6 and 8, Natsume discloses the claimed invention as indicated above, which is configured as a rear taillight of a motor vehicle. However, Natsume does not disclose reverse lights for the device (i.e. white lights). Chen discloses a rear taillight for a vehicle serving as a tail lamp, a stop lamp, a turn signal lamp, and a reverse light. Chen provides a grid of white LEDs to act as reverse lights. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide at least one of the matrices provided in Natsume with white-light-producing LEDs to serve as reverse lights. One would be motivated to do so to eliminate the need for a separate reverse light on the vehicle. Also, rear vehicle lamps serving as a tail lamp, a stop lamp, a turn signal lamp, as well as a reverse light are well known in the art. It is inherent in the art that several combinations of LEDs can produce white light amongst those are red and green LEDs; blue and yellow/amber LEDs; and a blue LED chip surrounded by a yellow phosphor material. It is also inherent in the art to provide the array (or light source) within the focal plane of the optical element (or lens).

In regard to claim 10, Natsume discloses the claimed invention except for the optical element resting directly on the chip cover. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the optical element resting directly on the chip cover, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. One would be motivated to do so because doing so would eliminate the possibility of foreign particles from

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lodging between the chip cover and optical element preventing the light from passing between the two.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Martineau (US 2003/0165061)
- Chen (US 2004/0000867)
- Muraki et al. (US 4,630,180)
- Takahashi (US 5,382,811)
- Erickson et al. (US 5,779,351)
- Ando et al. (US 5,863,676)
- Fujii et al. (US 6,208,078)

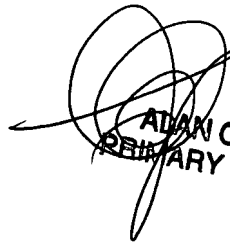
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leah S. Lovell whose telephone number is (571) 272-2719. The examiner can normally be reached on Monday through Friday 7:45 a.m. until 4:15 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee can be reached on (571) 272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leah Lovell  
Examiner  
11 May 2007



ADAM CARIASO  
PRIMARY EXAMINER